User's Manual

Logimac 210/220 – PLC based control with up to 4 floats

System general characteristics

LOGIMAC® 210/220 (P/N 13-50 90 69) is a control system with the programmable logic controller (PLC), which has been programmed especially for the operation and surveillance of stations containing two submersible FLYGT pumps (duplex pump station). A level control is based on 3 (LOGIMAC® 210 sequence) or 4(LOGIMAC® 220 sequence) float signals (level switches).

The control system accomplishes the following basic functions (without being limited to it):

- **allows a choice between LOGIMAC® 210 and 220 sequences**
- **controls the two pumps start - stop sequence**
- **alternates the duty pump after each cycle of operation,**
- **detects and diagnoses fault conditions of the pumps and of the level sensors,**
- **puts into service the standby pump if the duty pump is in fault,**
- **Identifies the degree of urgency between all fault-conditions and classifies them as FAULTS or EMERGENCY.**

1.1 Part numbers and reference drawing

Programmable logic controller LOGIMAC® 210/220VM-PLC : P/N 13-50 90 70
Alarm annunciator LOGIMAC® 220/210-AP----------: P/N 13-50 90 12

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2. DETAILED SPECIFICATION

2.1 LOGIMAC® 210/220-PLC CONFIGURATION and TECHNICAL DATA

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ITEM #	DESCRIPTION	TECHNICAL DATA
P/N 13-50 90 70	CPU & Memory	Flash user memory program memory: 6 Kwords storage memory: 2 Kwords operation speed: 1.0 ms/ 1Kword of logic user program: L221VM
	16 - inputs	24V DC; current consumption: 7.3mA max./point
	11 relays+1 DC -outputs	operating.voltage: 5-30 V DC 5-250 V AC max. load: 2A resistive/ 0.6A ind.
	Supply	120V AC (102 -132V), 60 Hz (47- 63 Hz) DC output power supply: 24V + -10%, 200 mA max. current
	Dimensions	(90H x 150W x76D) mm
	service temperature stocking temperature	0..+55°C -40..+85°C
	Port Removable terminal strip	Two serial ports:1: RS 232, 2: RS 485 included

2.2. ASSIGNATION OF LOGIMAC® 210/220-PLC INPUTS & OUTPUTS

LOGIMAC® 210/220-PLC has 16 digital inputs and 12 digital outputs (11 relays-based and 1 DC). For this application the inputs and outputs are assigned to the signals specified in the table 1 and 2 respectively.

TABLE 1.: INPUT ASSIGNATION

INPUT	DESCRIPTION	NOTES
1	ACKNOWLEDGE/ RESET	signal provided by push button RESET on the alarm annunciator
2	M1 contactor closed	auxiliary contact of the M1 contactor to indicate the contactor status
3	M2 contactor closed	auxiliary contact of the M2 contactor to indicate the contactor status
4	B1, R5	contact indicating overcurrent (breaker aux. contact), leakage or high temperature (interface relay contact from Mini CAS II unit) of the P1 pump
5	B2, R6	contact indicating overcurrent (breaker aux. contact), leakage or high temperature (interface relay contact from Mini CAS II unit) of the P2 pump
6	PFD	power failure detection (PFD)
7	jumper or GEN SET RUN contact	to disable the parallel operation of two pumps; LOGIMAC 210 operation
8	not used	
9	FLL (or ISRL) option	contact indicating the low level reached (follows FLL float NC contact)
10	FLH- NO (or ISRH)	contact indicating the high level reached (follows FLH float NO contact)
11	FLH- NC (or ISRH)	contact indicating the high level reached (follows FLH float NC contact)
12	FL3	contact indicating the START 2 level reached (follows FL3 float NO contact)
13	FL2	contact indicating the START 1 level reached (follows FL2 float NO contact)
14	FL1	contact indicating the STOP level reached (follows FL1 float NO contact)
15	AUTO P1	contact indicating AUTO position of the mode selector of the P1 pump
16	AUTO P2	contact indicating AUTO position of the mode selector of the P2 pump

For wiring details see drawing L221I/O: LOGIMAC 210/220 I/O CONNECTION

TABLE 2.: OUTPUT ASSIGNATION

OUTPUT	DESCRIPTION	NOTES
1	High Level alarm (option 3)	The output of 24V DC, 0.75 A max. load, programmed as a memorised High Level alarm. Use a separate LED for indication.
2	M1 closing signal	order to close the M1 contactor (interface relay R1)
3	M2 closing signal	order to close the M2 contactor (interface relay R2)
4	**EMERGENCY** alarm	**EMERGENCY** alarm signal for remote transmission (interface relay R14)
5	Low Level alarm (option 2)	The output of 120V AC, 2 A max. load, programmed as a memorised Low Level alarm. Use a separate pilot light for alarm indication.
6	**EMERGENCY/FAULT**	**EMERGENCY** signal (flashing) and FAULT signal (stable) to alarm annunciator
7	P1 FAULT	P1 FAULT alarm signal to alarm annunciator (this output is activated if I4 input is ON or M1 contactor does not close its contact during nine(9) seconds following the order to close - R1 relay contact closing)
8	P2 FAULT	P2 FAULT alarm signal to alarm annunciator (this output is activated if I5 input is ON or M2 contactor does not close its contact during nine (9) seconds following the order to close - R2 relay contact closing
9	FL1 FAILURE	FL1 float FAILURE signal
10	FL2 FAILURE	FL2 float FAILURE signal
11	FL3 FAILURE	FL3 float FAILURE signal
12	FLH FAILURE	FLH float FAILURE signal

For wiring details see drawing L221 I/O: LOGIMAC 210/220 I/O CONNECTION

2.3 PROGRAM DESCRIPTION

2.3.1 FLOAT FAILURE DETECTION

Programmable controller (PLC) assumes a continuous surveillance of the operating capabilities of all floats and their electrical wiring.
Float failure detection is done during increasing and decreasing water level.
With a raising water level, the floats' NO (normally open) contact must close in sequence: FL1-FL2-FL3-FLH. If a lower float does not close its contact (contact **fails to close**) before the higher float, the lower float will be declared faulty.
With a water going down, the floats must open in sequence: FLH-FL3-FL2-FL1. If a lower float opens its NO contact before a higher float, the higher float (or floats) will be declared faulty (its contact **fails to open**).
The float failure fault can not be acknowledged or reset using the RESET push button of the alarm annunciator.
To clear the float failure fault, the float contact must close, if it failed to close, or open, if it failed to open.
A level sensor failure is indicated on the alarm annunciator by one of 4 LED diodes labelled as "**FL1 FAILURE", "FL2 FAILURE", "FL3 FAILURE","FLH FAILURE"** respectively

2.3.2. FLOAT ASSIGNATION

Four (or three for Logimac 210 sequence) specific levels are assigned to floats FL1, FL2, FL3, and FLH during each scan of program:

- STOP level
- START 1 level
- START 2 level (Logimac 220 sequence only)
- HIGH LEVEL alarm

Under normal circumstances (no float failure) the floats are assigned as follow:

- FL1 - STOP level (stops two pumps)
- FL2 - START 1 level (starts the duty pump)
- FL3 - START 2 level (starts the standby pump; Logimac 220 sequence only)
- FLH - water HIGH LEVEL alarm

If FL1 float fails with Logimac 220 sequence chosen, the operating floats will be assigned as follows:

- FL1 - failure alarm(out of order)
- FL2 - STOP level (stops two pumps)
- FL3 - START 1 level (starts the duty pump)
- FLH - START 2 level (starts the standby pump) and gives water HIGH LEVEL alarm

In Logimac 210 sequence START 2 is eliminated as well as the float FL3 and in this case the float FLH assumes the START of the pump.

NOTE: See table 1 in appendices 1 for floats assignation in each specific case of the float failure for LOGIMAC 220 sequence and table 2 for LOGIMAC 210 sequence (float FL3 is not used).

2.3.3. MODE OF OPERATION

A three-position MAN-OFF-AUTO operation mode selector is provided for each pump.
The AUTO position provides a completely automatic system operation.

If mode selector is placed in MAN position the respective pump will start without delay independently from level detector conditions and requirements.
To stop this pump , put the mode selector in OFF position.
Either during manual or automatic operation the pumps stop automatically on fault condition.

2.3.4 CHOICE OF PUMP TO START

The control system allows an operation of either one pump only (Logimac 210 sequence) or two pumps in parallel (Logimac 220 sequence) but prevents simultaneous start of two pumps.

In manual mode the pump with its mode selector placed in MAN position will start.

In automatic mode a choice of the pump to start is done by PLC program following the conditions specified below:

P1 PUMP is chosen to start as a **duty pump** if :

- The start conditions are reached (water level is higher than START 1 level) and
- P1 pump is operational (no faults) and its mode selector is in AUTO position , and
- The P1 cycle of operation had not been memorised, or the P2 pump is faulty or its mode selector is not in AUTO position.

P2 PUMP is chosen to start as a **duty pump** if :

- The start conditions are reached (water level is higher than START 1 level) and
- P2 pump is operational (no faults) and its mode selector is in AUTO position , and
- The P1 cycle of operation had been memorised, or the P1 pump is faulty or its mode selector is not in AUTO position.

P1 PUMP is chosen to start as a **standby pump** (to parallel operation with the duty pump) if :

- The parallel operation is enable (no jumper on the input 7= Logimac 220 sequence)
- The parallel operation conditions are reached (water level is higher than START 2 level) and
- P1 pump is operational (no faults) and its mode selector is in AUTO position , and
- M2 contactor is closed

P2 PUMP is chosen to start as a **standby pump** (to parallel operation with the duty pump) if :

- The parallel operation is enable (no jumper on the input 7= Logimac 220 sequence)
- The parallel operation conditions are reached (water level is higher than START 2 level) and
- P2 pump is operational (no faults) and its mode selector is in AUTO position , and
- M1 contactor is closed

Either start conditions or parallel conditions should be kept during at least **10-second** period (***START DELAY***) to start the pump.

2.3.5. CONTACTOR OPERATION

In automatic mode the M1 contactor of the P1 pump (or the M2 contactor of the P2 pump) will close following the closing signal from R1 (or R2) interface relay after ***START DELAY*** as specified in previous section.
Reception of closing confirmation by PLC is indicated by turning on the respective diode LED labelled **RUN P1** or **RUN P2** on alarm annunciator (see appendices 2 for annunciator details).

NOTE: ***Closing fault***: If PLC does not receive a confirmation of the closing (see M1 or M2 contact on PLC inputs I2, I3) during a 9-second period following the closing order (R1 or R2 relay closing contact), the closing signal will be removed and alarm will be signalled. The LED diode EMERGENCY/**FAULT** on the alarm annunciator will turn on.

In automatic mode, if stop conditions are reached (STOP level) and are held during 1.5-second period, the running pump contactors will open.

Each contactor can be opened or closed **manually,** using a mode selector (**MAN-OFF** positions).

Either during manual or automatic operation the contactor opens automatically on fault condition of the respective pump.

2.3.6. ALARMS

2.3.6.1. ALARM: P1 / P2 OVERCURRENT

On an overcurrent fault the respective pump breaker opens. Auxiliary NC contacts of breaker status (B1, B2) are used as overcurrent signals for PLC inputs.
If one of the contacts is closed (B1 or B2), alarm will be indicated by flashing LED diode (**OVERLOAD P1** or **OVERLOAD P2)** on the alarm annunciator, accompanied by the stable LED diode EMERGENCY/**FAULT**.
This alarm is not held or memorised in PLC memory but is maintained by the open pump breaker .
The contactor of the pump in fault will open automatically and can't close without the operator's intervention. Repair the pump fault before closing the tripped breaker.

2.3.6.2. ALARM: WATER LEAKAGE OR HIGH TEMPERATURE OF P1/ P2 PUMP

The faults detection will be done by the sensors attached to Mini CAS II units of ITT Flygt. The interface relay of this unit (**R5** or **R6**) operates if a temperature of pump goes higher than sensor adjustment or water is detected in the corresponding pump. The contacts of these relays are connected to PLC inputs to supply the information.

If one of these contacts is closed, the alarm WATER LEAKAGE/HIGH TEMPERATURE will be indicated by the flashing LED diode (**LEAK./TEMP P1** or **LEAK./TEMP P2**) on the alarm annunciator, accompanied by stable LED diode EMERGENCY/**FAULT**.

The high **TEMP**. alarm will be held (by Mini CAS II units), even if fault conditions disappear.
The **LEAK.** alarm is not held. It disappears with fault conditions disappearance.
The contactor of the pump in fault will open automatically and cannot be closed without operator's intervention if a fault is held (high **TEMP.**).

Reset the circuit after fault correction: push the RESET push button once for **acknowledge** (stop flashing) and twice for **reset.** To reset a high **TEMP**. alarm push RESET Mini CAS push button first.

2.3.6.3. ALARM: HIGH WATER LEVEL

The faults detection will be done by FLH float. The normally open (NO) contact of the high level float (or ISRH) is connected to PLC input.

If this contact is closed, a HIGH WATER LEVEL alarm will be memorised in PLC memory and will be indicated by LED diode (**HIGH LEVEL**) on the alarm annunciator, accompanied by flashing LED diode **EMERGENCY**/FAULT.

The R14 relay will operate (its NO contact is available for transmission of **EMERGENCY** signal remotely).
This alarm disappears with fault conditions' disappearance.
To have this alarm indication memorised use the option 3 described on the next page.

2.3.6.4. ALARM: M1 / M2 Contactor Closing Fault

If a corresponding pump contactor does not close after 9-second delay initialised by the pump closing signal (activation of the PLC output Q2 / Q3), the closing signal will be removed and the corresponding pump **M1** or **M2 contactor closing fault** will be memorised in the PLC memory. The information to PLC is provided by the auxiliary contact of the contactor status M1 or M2 (input I2 or I3)
The LED diode EMERGENCY/**FAULT** will light up.
This alarm is held and memorised in PLC memory. The outputs **Q7** or **Q8** will be activated (flashing).
Reset the circuit after fault correction: push the RESET push button on the alarm annunciator once for **acknowledge** (stop flashing) and twice for **reset.**

2.3.6.5. ALARM: LOW WATER LEVEL (option1)

The faults detection can be done by FLL float (NC contact). The normally open (NO) contact of an interposing relay ISRL should be connected to PLC input 9.

If this contact is closed, the LED diode EMERGENCY/**FAULT will** light up

This alarm will disappear with fault conditions' disappearance.

2.3.6.6. ALARM: Memorised LOW WATER LEVEL (option 2)

If option 1 is used and if the red pilot light (**LOW LEVEL**) is connected to the output **Q5** of the LOGIMAC-PLC the LOW WATER LEVEL alarm will be memorised in PLC memory and will be indicated by this red pilot light (**LOW LEVEL**) on the control panel, accompanied by LED diode EMERGENCY/**FAULT** on the alarm annunciator.

This alarm indication will be held even if the fault conditions disappear.

Reset the circuit after fault correction: push the RESET push button on the alarm annunciator once for **acknowledge** (stop flashing) and twice for **reset.**

2.3.6.7. ALARM: Memorised HIGH WATER LEVEL (option 3)

If the red light (HIGH LEVEL) is connected to the 24VDC output **Q1** of the LOGIMAC 210/220-PLC the HIGH WATER LEVEL alarm be indicated by this red light on the control panel.
This alarm indication will be hold even if the fault conditions disappear.

Reset the circuit after fault correction: push the RESET push button on the alarm annunciator once for **acknowledge** (stop flashing) and twice for **reset.**

2.3.7 EMERGENCY/FAULT SIGNAL

An **EMERGENCY** condition exists if :

- high level sensor (float **FLH**) is activated or is faulty; or ,
- both pumps have experienced at least one fault each or,
- three (two for L210 sequence)or more floats failed
- power phase failure is detected

In an **EMERGENCY** condition alarm :

- flashing LED diode **EMERGENCY**/FAULT is lit on the alarm annunciator ;
- **R14** relay is activated (its NO contact is available for transmission of **EMERGENCY** signal remotely).

Any fault condition other than an EMERGENCY condition is considered as **FAULT** and will be indicated by:

- turning on a corresponding alarm LED diode on the alarm annunciator, and
- turning on LED diode EMERGENCY/**FAULT** stable (**no flashing**)

NOTE: If **FAULT** signal is required for remote indication, connect an auxiliary relay R15 (24V DC.) to EMERGENCY/**FAULT** PLC output Q6 in series with normally closed contact (NC) of R14 relay. Use a contact of this relay as FAULT signal (see drawing L221 I/O for details)

2.3.8. ADDITIONNAL FEATURES ADDED IN THE PROGRAMMING

Version 1.2

FLOATS FAILURE RESET: the floats' failure reset is possible using the RESET push button on the annunciator panel, starting with this version of program.
The condition is, that the pumps were stopped by FL1 or FL2 float (float FL1 or FL2 is OK).

Version 1.3

LOW LEVEL ALARM BY-PASS DURING THE APF CLEANER OPERATION: The feature is applicable to the system using low level float & APF cleaner. APF cleaner maintains pumps running until snoring (in order to clean a sump), so without this feature at each APF cleaning cycle the low level alarm will appear.
This feature block the low level alarm appearance until the first normal float (FL1, FL2, FL3, and FLH) is tilted.

Version 1.4

LOW LEVEL FLOAT FAILURE DETECTION & BY-PASS:
Low level float as an alarm float stops al the pumps in order to protect the pumps (running without water can damage pumps as well as pipes' system)
Being the lowest float in the sump, the low level float can be trapped in solids so the control system can be blocked under a low level condition. This version of program includes the detection of that kind of situation.
The detection of Low Level Float failure (low level float trapped) is made by the activation of one of the higher floats (FL1, FL2, FL3, and FLH). Once the FLL failure detected the system lock is removed and the pumps can operate.
The FLL is back to the system (FLL failure is reset) at the and of pumping cycle (all upper floats OFF) or at any moment if the float is liberated from solids (is flipped).

Version 1.5
MAXIMUM RUN TIME OF ONE PUMP

When only one pump is running during period of 2 consecutive hours it will be stopped and the other pump will start if the start condition still exists. It is applicable only if the other pump is available.

Version 1.6

LOW LEVEL FLOAT FAILURE DETECTION & BY-PASS only with High Level float:
The detection of Low Level Float failure (low level float trapped) is made by the activation of High level float only (FLH). Once the FLL failure detected the system lock is removed and the pumps can operate.
The FLL is back to the system (FLL failure is reset) at the and of pumping cycle (all upper floats OFF) or at any moment if the float is liberated from solids (is flipped).

Version 1.8

One pump failure added to Emergency Alarm if simplex operation.

2.4 ALARM ANNUNCIATOR LOGIMAC® 220/210-AP (P/N 13 - 50 90 12).

2.4.1 TECHNICAL DATA :

Supply voltage: 24V DC
Current consuming: 80 mA.max.

2.4.2 COMPONENTS and THEIR FUNCTIONS:

The annunciator is composed of four (4) integrated parts:

- Printed circuit board (P/N 13-50 90 07)
- Face plate with descriptions (P/N 13-51 15 37)
- Board connector with terminal (P/N 13-42 00 03)
- Flat cable (P/N 13-41 00 15)

The printed circuit board represents the circuit as per drawing 2603-A2 (see appendices 2). The circuit contains:

- 13 diodes LED (D1..D13),
- 2 push buttons (SW1et SW2),
- 13 resistors (R1..R13) to limit a current and
- 26 auxiliary diodes of type 1N4004 (D14.. 39).

Each parallel circuit (total 16 circuits) is connected to one pin (1-16) of the (P1) plug for flat cable connection.

The functions of circuit are :

Indication:

The positive(+) signal of 24V DC power supply connected to terminal 2 is common for all diodes LED. To turn on one diode LED, the negative (-) signal should be connected to another end of circuit. It will be done if the PLC output relay contact, connected to the specific LED circuit closes ***(All PLC outputs connected to annunciator should have the common terminal COM connected to negative(-) terminal of source).***

Lamp test:

The negative (-) signal of 24V DC power supply connected to terminal 1 is used to test LED diodes. Pushing the push button SW1, connect 24V DC power supply to all LED diode circuits and turn all LED's on.

Acknowledge/Reset:

Pushing the push button SW2, the positive (+) signal of 24V DC power supply will be connected to PLC input being connected to terminal 4 of the annunciator.
This input signal is programmed in PLC as ***acknowledge*** signal (first appearance) and as ***reset*** signal (second appearance).
It is important to connect the common terminal COM of this PLC input to negative (-) terminal of source.

Face plate is a two-side lamicoid plate, with descriptions in English on the one side and in French on the another one. The descriptions are as per drawing C-51 15 37
(see appendices 2).

Board connector with terminal is composed of 16 screw-terminals connected to a 16-pin male plug (P2) for a flat cable.

The flat cable is a 2-meters length cable with a female-plug on each end, which can be plugged in:

- P1 plug (on the printed circuit board) et
- P2 plug (on the board connector with terminal).

APPENDICE 1

TABLE 1. ASSIGNATION OF FLOATS for LOGIMAC 220 sequence.

faulty float (s)	**FUNCTION FLOAT 1**	**FUNCTION FLOAT 2**	**FUNCTION FLOAT 3**	**FUNCTION FLOAT H**	**INDICATION**
NONE	STOP (stops two pumps)	START 1 (starts duty pump)	START 2 (starts standby pump)	HIGH LEVEL alarm	**NONE** or EMERGENCY if FLH active
FLOAT 1	OUT OF ORDER	STOP (stops two pumps)	START 1 (starts duty pump)	HIGH LEVEL alarm & START 2 (starts standby pump)	**FAULT** or EMERGENCY if FLH active
FLOAT 2	STOP (stops two pumps)	OUT OF ORDER	START 1 (starts duty pump)	HIGH LEVEL alarm & START 2 (starts standby pump)	**FAULT** or EMERGENCY if FLH active
FLOAT 3	STOP (stops two pumps)	START 1 (starts duty pump)	OUT OF ORDER	HIGH LEVEL alarm & START 2 (starts standby pump	**FAULT** or EMERGENCY if FLH active
FLOAT 4	STOP (stops two pumps)	START 1 (starts duty pump)	START 2 (starts standby pump)	OUT OF ORDER	**EMERGENCY**
FLOATS 1 & 2	OUT OF ORDER	OUT OF ORDER	STOP (stops two pumps)	HIGH LEVEL alarm & START1&2 (starts two pumps)	**FAULT** or EMERGENCY if FLH active
FLOATS 1 & 3	OUT OF ORDER	STOP (stops two pumps)	OUT OF ORDER	HIGH LEVEL alarm & START1&2 (starts two pumps)	**FAULT** or EMERGENCY if FLH active
FLOATS 1 & H	OUT OF ORDER	STOP (stops two pumps)	START 1& 2 (starts two pumps)	OUT OF ORDER	**EMERGENCY**
FLOATS 2 & 3	STOP (stops two pumps)	OUT OF ORDER	OUT OF ORDER	HIGH LEVEL alarm & START1&2 (starts two pumps)	**FAULT** or EMERGENCY if FLH active
FLOATS 2 & H	STOP (stops two pumps)	OUT OF ORDER	START 1& 2 (starts two pumps)	OUT OF ORDER	**EMERGENCY**
FLOATS 3 ET H	STOP (stops two pumps)	START 1& 2 (starts two pumps)	OUT OF ORDER	OUT OF ORDER	**EMERGENCY**
3 FLOATS or MORE	TWO PUMPS START AND KEEP RUNNING UNTIL FAULT CORRECTION				**EMERGENCY**

TABLE 2. ASSIGNATION OF FLOATS FOR LOGIMAC 210 SEQUENCE

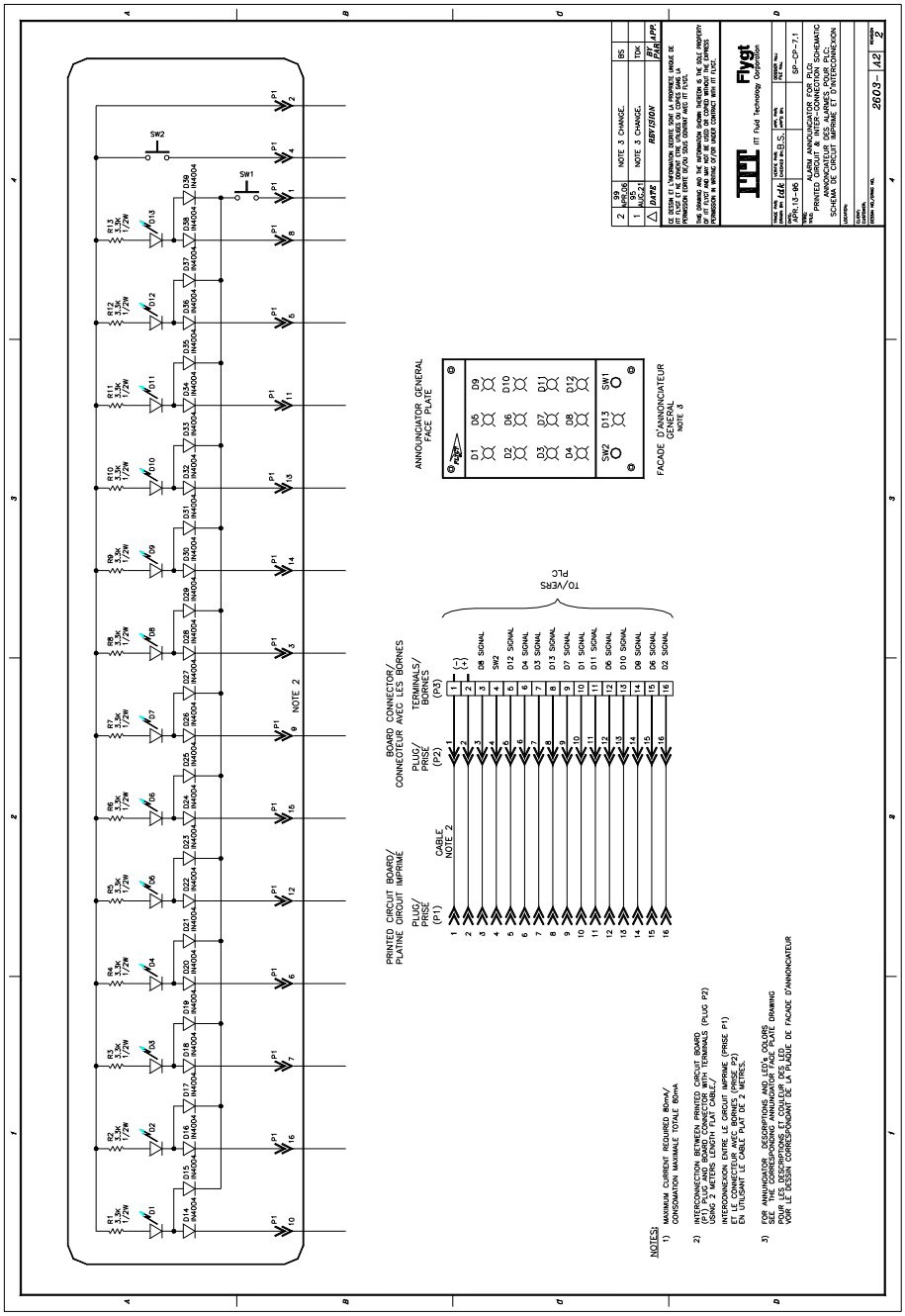
faulty float (s)	**FUNCTION FLOAT 1**	**FUNCTION FLOAT 2**	**FUNCTION FLOAT H**	**INDICATION**
NONE	STOP (stops pump)	START (starts duty pump)	HIGH LEVEL alarm	**NONE** or EMERGENCY if FLH active
FLOAT 1	OUT OF ORDER	STOP (stops pump)	HIGH LEVEL alarm & START starts duty pump	**FAULT** EMERGENCY if FLH active
FLOAT 2	STOP (stops pump)	OUT OF ORDER	HIGH LEVEL alarm & START starts duty pump	**FAULT** EMERGENCY if FLH active
FLOAT H	STOP (stops pump)	START (starts duty pump)	OUT OF ORDER	**EMERGENCY**
2 FLOATS or MORE	ONE PUMP START AND KEEP RUNNING UNTIL FAULT CORRECTION			**EMERGENCY**

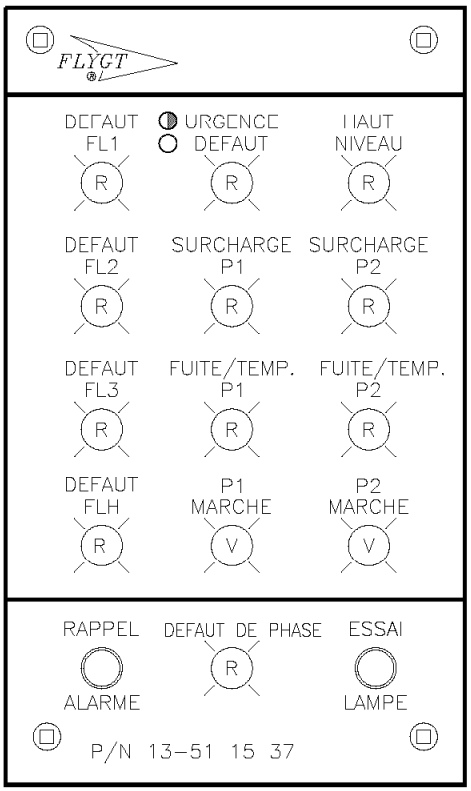
APPENDICE 2

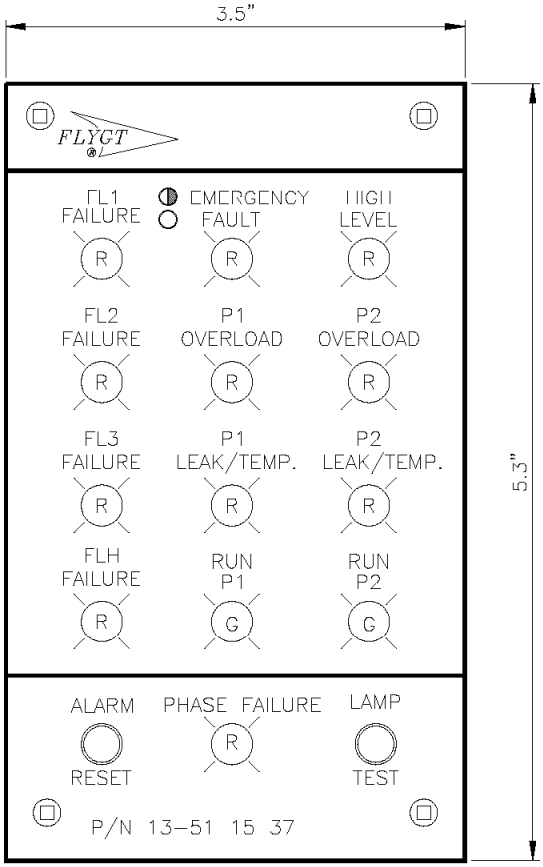
List of attached drawings:

1. Drawing # 2603-A2 : Alarm annunciator, printed circuit and interconnection schematic

2. Drawing # C-51 15 37: LOGIMAC® 220/210-AP Alarm annunciator, face plate with descriptions
3. Drawing # L221 I/O : LOGIMAC 210/220 INPUT/OUTPUT CONNECTION


NOTES:
1) MAXIMUM CURRENT REQUIRED 80mA
CONSOMMATION MAXIMALE TOTALE 80mA
2) INTERCONNECTION BETWEEN PRINTED CIRCUIT BOARD AND TYPE 16 PIN BOARD CONNECTOR WITH TERMINALS (PLUG P2) USING 2 METERS LENGTH FLAT CABLE.
INTERCONNEXION ENTRE LE CIRCUIT IMPRIME (PRISE P1) ET LE CONNECTEUR AVEC BORNES (PRISE P2) EN UTILISANT LE CABLE PLAT DE 2 METRES.
3) FOR ANNUNCIATOR DESCRIPTIONS AND LED'S COLORS SEE TECHNICAL SPECIFICATIONS ANNUNCIATOR FACE PLATE Drawing
POUR LES DESCRIPTIONS ET COULEUR DES LED VOIR LE DESSIN CORRESPONDANT DE LA PLAQUE DE FACADE D'ANNONCIATEUR
PRINTED CIRCUIT BOARD/ PLATINE CIRCUIT IMPRIME
PLUG/ PRISE (P1)
CABLE NOTE 2
BOARD CONNECTOR/ CONNECTEUR AVEC LES BORNES
PLUG/ PRISE (P2)
TERMINALS/ BORNES (P2)
TO/VERS PLC
ANNUNCIATOR GENERAL FACE PLATE
FACADE D'ANNONCIATEUR GENERAL
NOTE 3
NOTE 2
SW1
SW2
D1 D2 D3 D4 D5 D6 D7 D8 D9 D10 D11 D12 D13
Flygt
ITT Fluid Technology Corporation
PRINTED CIRCUIT & INTER-CONNECTION SCHEMATIC
ANNONCIATEUR AVEC ALARMES POUR PLC
SCHEMA DE CIRCUIT IMPRIME ET D'INTERCONNEXION
2603-
A2





ÉMIS POUR: ISSUED FOR:
☐ ACHAT PURCHASING
☐ FABRICATION
☐ INSPECTION
☐ APPROBATION APPROVAL
☐ INFORMATION
☐ PLANIFICATION PLANNING
☐ QUOTATION

TITRE/TITLE

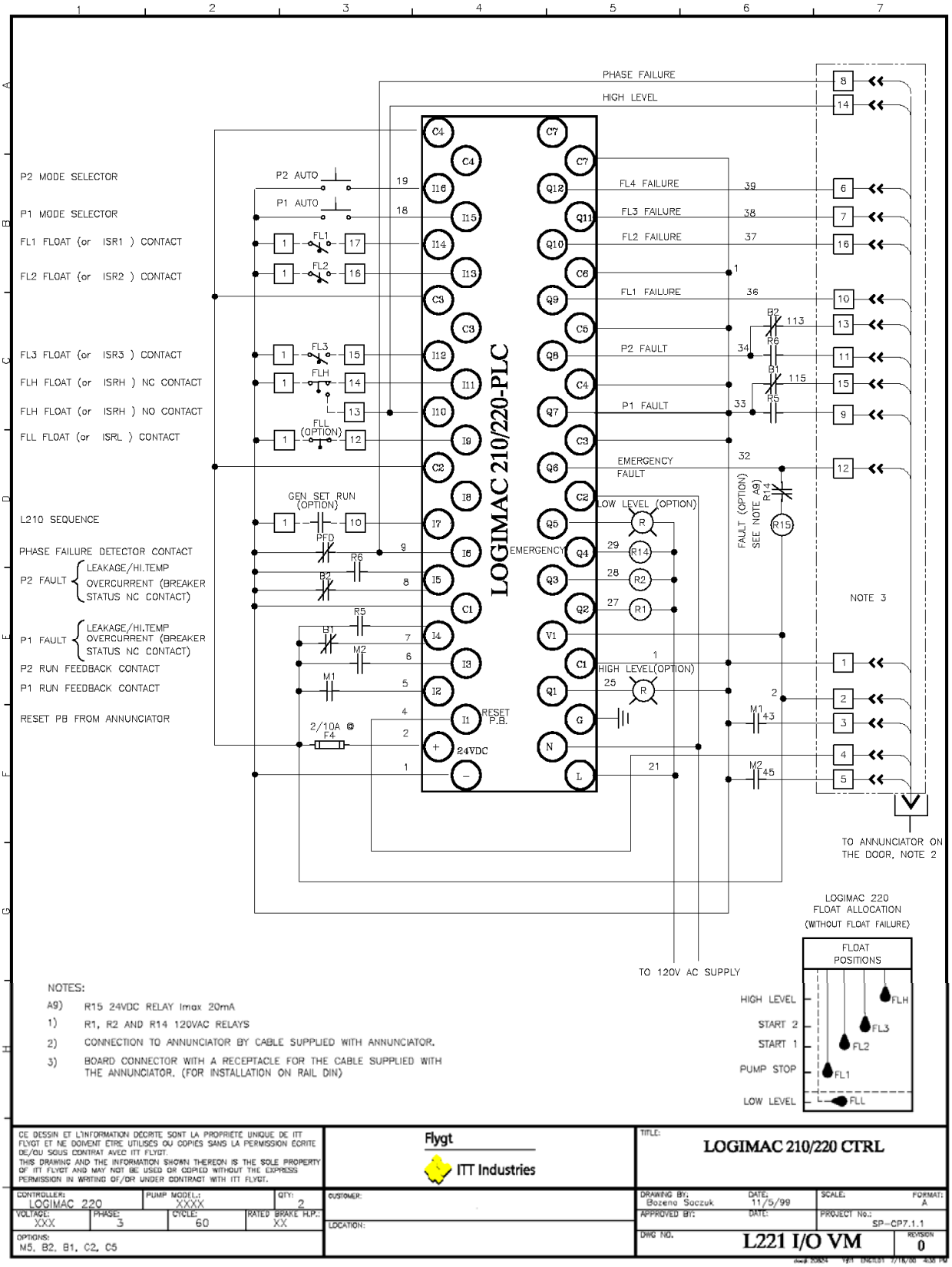
PLAQUE D'ANNONCIATEUR REVERSIBLE
AVEC LES DESCRIPTIONS (LOGIMAC 210/220)

REVERSIBLE ANNOUNCIATOR PLATE
WITH DESCRIPTIONS (LOGIMAC 210/220)

DESCRIPTION

REVERSIBLE ANNOUNCIATOR PLATE
WITH DESCRIPTIONS (LOGIMAC 210/220).
WHITE LETTERING ON A BLACK BACKGROUND.

VERIF./CHK'D. : L.J.L.	APPR. L.J.L.
FOURNISSEUR/ SUPPLIER	DATE 95-09-07
FLYGT N/P : P/N : C-51 15 37	REV. 2



NOTES:

A9) R15 24VDC RELAY Imax 20mA

1) R1, R2 AND R14 120VAC RELAYS

2) CONNECTION TO ANNUNCIATOR BY CABLE SUPPLIED WITH ANNUNCIATOR.

3) BOARD CONNECTOR WITH A RECEPTACLE FOR THE CABLE SUPPLIED WITH THE ANNUNCIATOR. (FOR INSTALLATION ON RAIL DIN)

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Flygt
ITT Industries

TITLE: LOGIMAC 210/220 CTRL

CONTROLLER:	PUMP MODEL.:	QTY:
LOGIMAC 220	XXXX	2

VOLTAGE:	PHASE:	CYCLE:	RATED BRAKE H.P.:
XXX	3	60	XX

OPTIONS: M5, B2, B1, C2, C5

CUSTOMER:
LOCATION:

DRAWING BY:	DATE:	SCALE:	FORMAT:
Bozena Saczuk	11/5/99		A
APPROVED BY:	DATE:	PROJECT No.:	
		SP-CP7.1.1	

DWG NO. L221 I/O VM REVISION 0

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